Individual homework assignment #1.

1. Excess pressure in steam generator is $p = (1+N)/10$ bar while barometrical pressure is $B1 = (725+N)$ mmHg. Define excess pressure in steam generator if barometric pressure would rise up to $B2 = (785+N)$ mmHg and absolute pressure in boiler would be the same.

2. Volume of air vessel is $(0,3+N/100)$ m^3, density of air in it is 2,86 kg/m^3. Define the mass of air into vessel.

3. Pressure in steam generator according to manometer is $(13+N/5)$ MPa. Define absolute pressure in steam generator if atmospheric pressure is $(1+N/100)$ atm.

4. Vacuumeter shows underpressure $(N/50)$ kgf/cm^2. Define absolute pressure into the vessel if atmospheric pressure is 100 kPa?

5. Define the mass of gas with $V=N$ gallon, if its density is 1,05 kg/m^3?

6. Manometer on steam generator shows $P = (0,4+N/100)$ mPa. Define absolute pressure into steam generator if barometer shows $(94+N)$ kPa.

7. Pressure into condenser of steam turbine is $(5+N)$ kPa. Atmospheric air pressure is $(100-N/10)$ kPa. Define underpressure into condenser.

8. The temperature of outside air is $(20+N)$ °C. Define if the Freon HCFC-123 will boil at this temperature if its boiling point is 82.08 F.

9. Would N pd of water at 20 °C and atmospheric pressure boil if it will be supplied with $50*N$ Btu of thermal energy?

10. The vehicle engine has $(100+N)$ horse power. How much energy (in J) will it consume at maximal power with efficiency 50 % for 1 minute?

   N here is number of your variant.